IN THE CLAIMS

1-5. (Cancelled)

6. (Currently Amended) A solid-state complementary metal-oxide semiconductor type image pickup device, comprising:

a semiconductor substrate having a plurality of well ~~region~~ regions formed thereon; and

a pixel unit having a plurality of pixels in a plurality of pixel ~~row~~ rows on the semiconductor substrate, each pixel in the pixel unit including

(a) a photoelectric conversion element formed in each of said plurality of well ~~region~~ regions to receive light and produce a signal charge in accordance with an amount of the received light;

(b) a readout section formed in each of said plurality of well ~~region~~ regions to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing;

(c) a node connected to the photoelectric conversion element through the readout section; ~~and~~

(d) voltage control unit to apply a variable substrate bias voltage to each of said plurality of well ~~region~~ regions dependent upon the read out of the signal charge by said readout section,

wherein,

the plurality of well ~~region is~~ regions are electrically isolated from each other ~~well regions~~ along ~~the~~ each of the plurality of pixel ~~row~~ rows.

7. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein said plurality of ~~pixels~~ pixel rows are arranged in a two-dimensional array on said semiconductor substrate.

8. (Cancelled)

9. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 7, wherein ~~said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and~~ an independent substrate bias voltage is applied to each of the plurality of well~~cell~~ regions for each of the plurality of rows~~row~~.

10. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein each of said plurality of well ~~region is~~regions are a p-type well region and the substrate bias voltage is a negative voltage.

11. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein said solid-state image pickup device each pixel also includes a pixel transistor connected to said photoelectric conversion element through said node for converting the signal charge read out from said photoelectric conversion element into an electric signal and outputting the electric signal to a signal line.

12. (Cancelled)

13. (Currently Amended) A complementary metal-oxide semiconductor type solid-state image pickup device, comprising:

a semiconductor substrate having a plurality of well ~~region~~ regions formed thereon; and

a pixel unit having a plurality of pixels in a plurality of pixel ~~row~~ rows on the semiconductor substrate, each pixel in the pixel unit including

(a) a photoelectric conversion element formed in each of said plurality of well ~~region~~ regions to receive light and produce a signal charge in accordance with an amount of the received light;

(b) a readout section formed in each of said plurality of well ~~region~~ regions to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing;

(c) a node connected to the photoelectric conversion element through the readout section, and

(d) voltage control means to apply a substrate bias voltage to each of said plurality of well ~~region~~ regions and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element,

wherein,

the plurality of well ~~region~~ regions are~~is~~ electrically isolated from each other ~~well regions~~ along ~~the~~ each of the plurality of pixel ~~row~~rows.

14. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein said plurality of ~~pixels~~ pixel rows are in a two-dimensional array on said semiconductor substrate.

15. (Cancelled)

16. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 14, wherein ~~said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and~~ an independent substrate bias voltage is applied to each of the ~~cell~~ plurality of well regions for each of the plurality of rows~~row~~.

17. (Currently Amended) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein each of said plurality of well ~~region is~~regions are a p-type well region and the substrate bias voltage is a negative voltage.

18. (Previously Presented) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 13, wherein each of said plurality of

pixels also includes a pixel transistor connected to said photoelectric conversion element through said node for converting the signal charge read out from said photoelectric conversion element into an electric signal and outputting the electric signal to a signal line.

19. (Cancelled)

20. (Currently Amended) A method to drive a solid-state image pickup device including (a) a semiconductor substrate having a plurality of well ~~region~~ regions formed thereon; and (b) a pixel unit including a plurality of pixels in a plurality of pixel ~~row~~ rows on the semiconductor substrate, each pixel in the pixel unit including (i) a photoelectric conversion element formed in each of said plurality of well ~~region~~ regions to receive light and produce a signal charge in accordance with an amount of the received light, (ii) a readout section formed in each of said plurality of well ~~region~~ regions to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing, (iii) a node connected to the photoelectric conversion element through the readout section, and (iv) voltage control means to apply a substrate bias voltage to each of said plurality of well ~~region~~ regions and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element, said method comprising the steps of:

converting light to a signal charge;

storing said signal charge during a charge storage period; and

applying a predetermined substrate bias voltage to each of said plurality of well ~~region~~ regions that is variable dependent upon the signal charge read out by said readout section during said readout period,

wherein,

the plurality of well ~~region~~ regions are ~~is~~ electrically isolated from each other ~~well regions~~ along each of the plurality of pixel ~~row~~rows.

21. (Currently Amended) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 20, wherein

said photoelectric conversion element is provided for each of ~~a~~ said plurality of pixels, and

said plurality of pixel rows are formed in a two-dimensional array on said semiconductor substrate.

22. (Cancelled)

23. (Currently Amended) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 21, wherein ~~said well region is formed in an electrically isolated relationship for each row of said pixels arranged in the two-dimensional array, and~~ an independent substrate bias voltage is applied to each of the plurality of well~~cell~~ regions for each of the plurality of rows~~row~~.

24. (Currently Amended) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 20, wherein each of said plurality of well ~~region is~~regions are a p-type well region and the substrate bias voltage is a negative voltage.

25. (Currently Amended) A method for driving a complementary metal-oxide semiconductor type solid-state image pickup device including (a) a semiconductor substrate having a plurality of well ~~region~~ regions formed thereon, and (b) a pixel unit including a plurality of pixels in a plurality of pixel ~~row~~ rows on the semiconductor substrate, each pixel in the pixel unit including (i) a photoelectric conversion element formed in each of said plurality of well ~~region~~ regions to receive light and produce a signal charge in accordance with an amount of the received light, (ii) a readout section formed in each of said plurality of well ~~region~~ regions to read out the signal charge produced by said photoelectric conversion element at a predetermined readout timing, (iii) a node to connect the photo electric conversion element through the readout section, and (iv) voltage control means to apply a substrate bias voltage to each of said plurality of well ~~region~~ regions and change the substrate bias voltage during a storage period of the signal charge by said photoelectric conversion element, said method comprising the steps of:

converting light to a signal charge,

storing said signal charge during a charge storage period, and

applying a substrate bias voltage to each of said plurality of well ~~region~~ regions and changing the substrate bias voltage during said storage period of the signal charge by said photoelectric conversion element,

wherein,

the plurality of well ~~region~~ regions are ~~is~~ electrically isolated from each other ~~well regions~~ along ~~the~~ each of the plurality of pixel ~~row~~rows.

26. (Currently Amended) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim 25, wherein

said photoelectric conversion element is provided for each of ~~a~~ said plurality of pixels, and

said plurality of pixel rows are formed in a two-dimensional array on said semiconductor substrate.

27. (Currently Amended) The driving method for a complementary metal-oxide semiconductor type solid-state image pickup device according to claim ~~6~~25, further comprising:

reducing a~~wherein the~~ readout voltage ~~is reduced~~ by applying the substrate bias voltage synchronized with charge transfer.

28. (New) The complementary metal-oxide semiconductor type solid-state image pickup device according to claim 6, wherein each of the plurality of well regions include a plurality of pixels.